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## THE PROBLEM OF EFFECTIVENESS IN THE MANAGING ASSESSMENT IN NATURAL VALUABLE AREAS

**ABSTRACT.** Effective way of managing in the natural valuable areas is possible through the ecologization of the economy. The effectiveness of managing resulting from the natural valuable areas is difficult to measure, because most of the benefits coming from these areas is deprived of the price (financial value). Functioning methods and instruments, which should minimize the costs of achieving desirable ecological aims or the costs of sustainable development accomplishment for natural valuable areas are strictly limited.

Evaluation of natural valuable areas values should be based on reliable methods and valorization techniques of these areas.

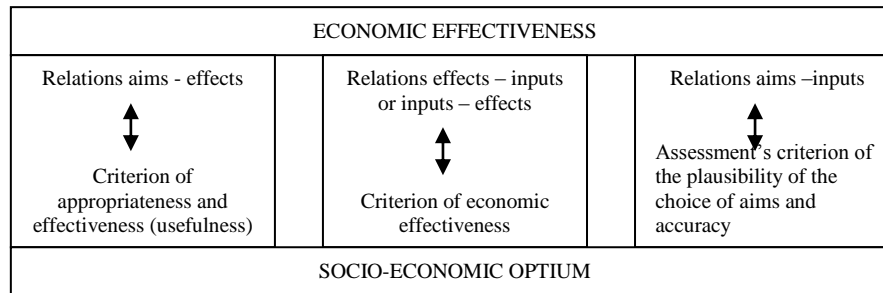
There are different methods to conduct a general value of natural valuable areas. To most often applied, one can include: cost-benefit analysis, safe minimum standard method, effect on production, preventive expenditure method and replacement cost method, hedonic method, travel cost method, contingent valuation method.

**JEL Classification:** D61, Q51 **Keywords:** effectiveness, evaluation of natural valuable areas.

### Introduction to effectiveness

The problem of effectiveness is one of the basic issues of economics, especially this part which considers economic decision (choices) optimization. Effectiveness is often presented as a criterion of optimization. The category of effectiveness is of wide context, of philosophical feature. While formulating it, we have to explain its semantic meaning and clarify some economic issues.

According to popularly accepted definition, “effectiveness is a relation of a certain effect to a given production factor or a group of production factors” (Nowa..., 1995, p. 192), however there is usually a reservation, that the effect as well as the factors’ inputs, can be measured through different kinds of meters. These last ones mentioned above, can be natural meters (production in physical units) as well as financial ones (aggregate meters applied in the systems of socio-economic statistics – gross domestic product, national income). These metres can measure microeconomic and macroeconomic phenomena.



Scheme 1. Assessment's criteria of effectively – operational managing

Source: Becla A. *et al.*, 2010, p. 93.

Therefore effectiveness this is a relation, described in time and space, between obtained results and incurred inputs in the context of the action's aims, measures and conditions necessary to their achievement. That is why, it is a feature of human activity, which in favor of the accomplishment of an intended aim. This action therefore, is intentional and effective. Effectiveness introduces full relation of the effects towards incurred inputs, at the same time, it is subjected to the structural and dynamic assessment. These are useful indicators while making decisions *ex ante* and the assessment of the decision *ex post*.

In economic dimension effectiveness is treated as a criterion, measure towards economic ventures, allowing for the choice of one of them and defining alternative costs. In this function, effectiveness takes the form of appointed indicator or not. In the appointed form, effectiveness is a quantity which shows absolute amounts of income, profit or cost. They are introduced in a natural (subject) view or valuable (financial). In the inappointed form it is most often the relative relation of two defined quantities:

$$E_1 = \frac{Ef}{Nk}$$

where: Ef – effects, Nk – inputs and

$$E_2 = \frac{Nk}{Ef}$$

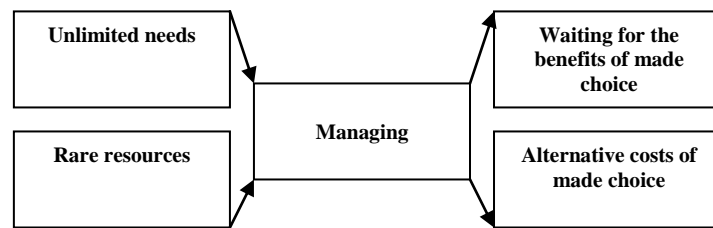
In the case of the first formula, we get the indicator which informs us what income of each unit's inputs is. In the second case, it is an indicator showing input-absorption of each unit's income. Inputs as well as effects can be characterized thanks to various measures (costs – incomes, profits) introduced in natural units or valuable ones (financial).

Defining and measurement of effectiveness stand for specific problems. Others are connected with the assessment of their value. When is the effectiveness maximum, when it is enough and what decides about that? In the theory of economics the problem of effectiveness directly refers to the issue of rational managing. The aim of this article is to diagnose the problems of effectiveness on the basis of natural valuable areas.

## 1. Effective managing on the natural valuable areas

Managing should be treated as the process of making decisions concerning the ways of using economical resources or as the process of the accomplishment of transformations of

these resources into useful good (services) from the people's needs view. It means to possess the ability to satisfy these needs. The process of managing can be well described thanks to the following scheme (*Scheme 2*).



Scheme 2. Determinants and criteria of managing process

Source: Becla A., *et al.*, 2010, p. 91.

This scheme shows all crucial problems in managing, particularly the issues of economical effectiveness, socio-economical optimum, rationality, appropriateness or competence – statistical and dynamic. These problems refer to managing as a whole, more theoretically viewed process as well as to particular kinds of economical resources.

Managing as the process of necessary decisions is determined by unlimited (in the sense of the Cartesian kind product, magnitude and changeability – dynamics), needs or rare (in the sense of the Cartesian kind product, limitation – physical finiteness, demand and availability) economical resources. These two determinants give the managing the feature of necessity (indispensability). Limitlessness of the needs results from, as mentioned above, overlapping on each other the effects of genre diversity of man's needs, their individual and group magnitude (community of people) and changeability (dynamics) in time and space. Rarity of economical resources means the relation between the needed quantity of resource and the available quantity of resource. If it exceeds the unity, then a certain resource has an attribute of rarity. Available quantity of resource is physically limited, whereas needed quantity of this resource illustrates the level of the needs satisfaction, socio-economic development and even the range of waste in using a certain economical resource.

In the process of managing made decisions use two basic criteria – benefits and inputs (costs). The first ones in the phase of making decisions are of the character of expected ones (potential) benefits. Whereas, the inputs (costs) can be actual, real quantities which are necessary to accomplish a chosen decision or potential ones connected with each possible to accomplish alternative. There is one more approach which seems to be a better one; it is the analysis of alternative costs, understood as the qualities of lost, potential possibilities for the application of certain economical resources.

The managing process also takes place on other natural valuable areas. Geographical space should be considered to be such an area, which is subjected to legal and functional protection and, on which the rational managing, including resources and necessary restitution, is being accomplished.

Natural valuable areas should be treated as an element of natural capital. It means that this source should be subject to certain rules of various generality level. One of most important rules of managing the natural capital, one can include (Czaja, Becla, 2002, p. 62-63):

- 1) the rule of balancing resources and disbursement, in other words, it means to be knowledgeable about the resource scale of certain capital to run the evidence of its disbursements;

- 2) the rule of not depleting the natural capital resources, especially basic natural capital (e.g. biodiversity, the world of wild nature);
- 3) the rule of maintaining the diversity of natural capital components, on three levels of biological organization: genetic (ontogenetic), species and biocenotic (habitat);
- 4) zasada substytuowania kapitału naturalnego innymi formami kapitału. Changeability of natural capital elements is limited. Therefore, there is no possibility to entirely substitute this capital by other anthropogenic forms of capital, such as: object and financial capital, human capital, social capital or information one;
- 5) the principle of the minimization of the entropy source. From the natural observations it results that in natural processes, there are usually chosen such solutions which minimize the pace of enlargement of entropy in environment. A similar rule should be applied in business activity and in a human being functioning;
- 6) the principle of rational use from the natural capital resources (the application of the maximization criterion of the usefulness, obtained from natural capital), in other words comprehensiveness of gaining values;
- 7) the principle of the effective use of natural capital elements, in other words the economization of proceeding, which means to obey the criterion of gaining benefits' surplus over costs.

Natural valuable areas contribute to the accomplishment of the directives included in the document called: The Strategy of Poland's Sustainable Development until 2025, where there is written, that one of the most important tasks is to: "provide ecological security of the country, raise the quality of social life through providing a good condition of natural environment in the whole area of the country and also to guarantee that Polish natural and cultural heritage will be handed over future generations, in the state which will make it possible to accomplish their own aspirations" (Strategia..., 1999).

Effective way of managing in the natural valuable areas is possible through the ecologization of the economy. Economy ecologization influences on the economic development and also on the improvement of social life quality, particularly local communities. Local community finds employment (new workplaces) and incomes in pro-ecological sphere of business activity.

Business activity in accordance with the idea of sustainable development on valuable natural areas can be carried out by the following fields of science:

- tourism (and its environment-friendly forms),
- agriculture (ecological agriculture influencing on the production of health food),
- forest management (acquiring undergrowth, hunting),
- natural medicine and health-resort services (using natural environment conditions for the development of health-resort services),
- souvenir industry.

The protective function of valuable natural areas put a lot of restrictions on the business Activity, however these restrictions concern traditional forms of business activity. In the act on nature conservation there are listed orders and prohibitions (Act on wildlife conservation, Article 15, 17, 24, 33), concerning possible and forbidden forms of managing within the protected areas. That is why a desirable direction of development is greening of the economy (*Table 1*).

Table 1. Business activity in the selected forms of wildlife conservation

Type of activity	National park protection:		Landscape park	Area of protected landscape	Natura 2000 area
	accurate	part			
Ecotourism	-	+	+	+	+
Farm tourism	-	x	+	+	+
Cycling tourism	-	x	+	+	+
Mass tourism	-	x	x	+	+
Ecological agriculture	-	x	+	+	+
Care-farm forest management	x	+	+	+	+
Aquiring of undergrowth, efficient hunting	-	-	x	+	+

(-) unacceptable; (x) acceptable; (+) recommended

Source: Zielińska A., 2009, p. 110.

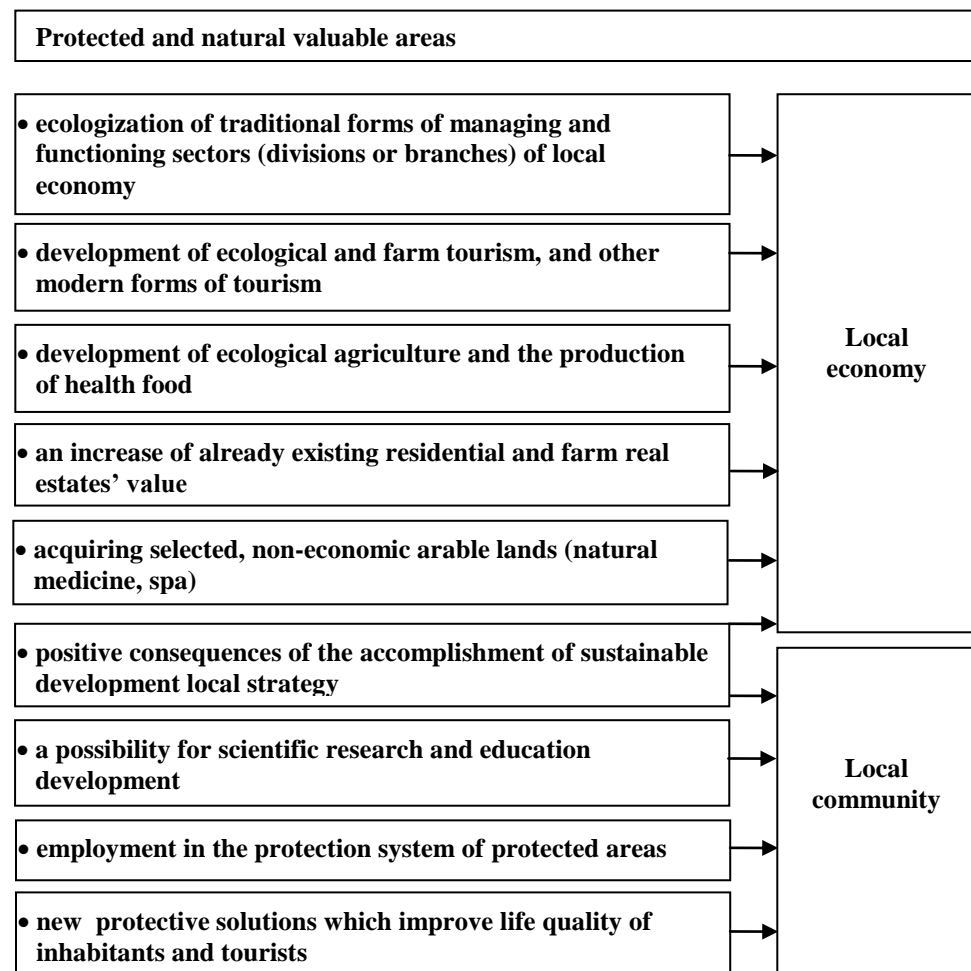
The above mentioned fields give measureable economic benefits, for which one can describe effectiveness. However, the difficulties with determining and measuring effectiveness appear for non-measureable benefits, resulting from the existence of natural valuable areas, such as:

- widespreading the principles of sustainable development, a proper shaping the areas and their economic potential;
- raising the ecological education level (educational – ecological tours) and the development of scientific research;
- increasing the local community mobility through creating temporary and part-time workplaces, and making more flexible the employment policy, and creating innovative workplaces;
- creating and supporting regional and local places of cultural heritage through cultivating regional traditions and customs;
- protection of cultural heritage, the development of cultural resources, joining into international, cultural activities, internationalizing the cultural heritage, international promotion of culture and supporting border cultural exchange;
- supporting civic, touristic-agricultural initiatives and widespreading the attitudes which protect local, natural environment resources among local communities;
- promoting active weekend leisure and health lifestyles among people and widespreading the idea of responsibility for somebody's own health;
- widespreading the knowledge about natural environment values with the possibility to use them in a cultural and touristic way, and also the promotion of touristic, recreational and cultural – historic values;
- stimulating to civic participation for environment protection (Zielińska, 2006, pp. 198-203);
- an impact on ethical and moral systems, shaping the system of values;
- the beauty of landscape and nature, inspirations for art, reflections and shaping the feeling if beauty.

The effectiveness of natural valuable areas is visible through its stimulating impact on local economy and local community. First of all, they favor the ecologization of traditional forms of managing and the already functioning sectors (divisions or branches) of local economy. Secondly, in the local economy such kinds of business activity like: ecological tourism, farm tourism and other forms of modern tourism, ecological agriculture and the

production of healthy food can develop. Thirdly, one can notice an increase of value of already existing residential and farm real estate, which are situated in natural valuable space. Fourthly, one can acquire various non-economic arable lands, particularly in the form of spa services and natural medicine. Fifthly, on the level of local communities, there are different possibilities to conduct scientific research and developing ecological education, and strengthening the civic participation. They create, getting more important in a modern economy, social capital. Sixthly, natural valuable areas generate additional employment and additional income, what is very important for local labour markets. Seventhly, New and various protection solutions improve life quality of inhabitants as well as visitors (e.g. tourists).

Extremely crucial conditions, concerning the effectiveness of natural valuable areas are dependent on local community, which has to be convinced, that the existence of these areas is a chance for development and improvement of life quality, in other words economic prosperity. Certainly, it requires the changes in society's mentality and attitudes. It is also a crucial condition of effective accomplishment of local sustainable development strategies and getting all positive consequences from the accomplishment of such strategies.



Scheme 3. A stimulating influence of protected areas and natural valuable areas on economy and community

Source: Becla A., Zielińska A., 2006, p. 122.

## 2. Effectiveness measurement for natural valuable areas

The economic assessment of the environment means to attribute financial value for foods and services provided by natural environment (e.g. natural valuable areas). Attributing economic values for the resources and natural values is connected with equal treatment of labour capital and natural environment, because foods and environmental services are not usually the subject of market transactions and their value is not revealed through market prices (look further Peszko G. *et al.*, 2003, p. 27).

The assessment of natural valuable areas brings many fundamental issues. First, it requires a very precise and complex information on influences on these areas (on flora, fauna, ecosystems, biodiversity), on their economic, health and environmental results. Secondly, one should recognize the size of owned environmental resources (inventorying) in natural valuable areas. Binding in Poland, the system of socio-economic statistics does not provides sufficient and reliable information. Losses connected with landscape degradation, with the loss of socio-cultural elements of local community are difficult to define. How to define the benefits of aesthetic and holiday effects, or the assimilative capacity of natural valuable areas? Moreover, there are not any proper and complete information if it goes about natural resources. Only a few districts in Poland carried out natural inventorying (look further Zielińska A.).

Is it, then, possible to carry out the measurement of the effectiveness of natural valuable areas? It is a very difficult venture. There are different methods to conduct a general value of natural valuable areas. To most often applied, one can include:

- 1) cost-benefit analysis,
- 2) safe minimum standard method,
- 3) effect on production,
- 4) preventive expenditure method and replacement cost method,
- 5) hedonic method,
- 6) travel cost method,
- 7) contingent valuation method.

The above mentioned methods of natural valuable areas assessment contend with many methodological and information problems, what limits a practical application of these methods. However, one should continuously look for new, better solutions and improve assessment methods, the well-known as well as empirically verified ones, in order to be able to appoint the effectiveness of natural valuable areas.

### Final conclusions

Gained results allow to formulate few conclusions:

- The effectiveness of managing resulting from the natural valuable areas is difficult to measure, because most of the benefits coming from these areas is deprived of the price (financial value). In the report TEEB (“The economics of ecosystems and biodiversity”) one calculated the value of annual loss of ecosystem function, which was estimated to be in the amount of 50 billion Euros. It means that, in the case of not taking the activities, the loss of biological diversity on a land itself, could cost 7% GDP until 2050, however, one should keep in mind that this amount would increase significantly, if take into account the loss of function provided by sea ecosystems (look further *Ekonomia...*, 2008).
- The measurement of the effectiveness for natural valuable areas come cross many important problems. Functioning methods and instruments, which should minimize the costs of achieving desirable ecological aims or the costs of sustainable development

accomplishment for natural valuable areas are strictly limited. That is why, one should look, in the theory of economics, for new methodological analysis basis and should examine the relation values among the system, natural valuable area – economy – society. Current system of national account should be enlarged by the change value of natural environment resources, human capital and ecosystem services movement. Annual financial reports should reveal all main external effects, including environmental damages, which has an impact on society and natural environment. One should get the value of natural valuable areas into economic account, creating a wider sozioeconomic account.

- Evaluation of natural valuable areas values should be based on reliable methods and valorization techniques of these areas. The assessment of the effectiveness of retaining protected areas and efficiency of these processes will contribute to the change in perceiving the category of economic effectiveness. It is crucial to complete it by the variables connected with the existence and functioning these areas in the reality surrounding us.
- Future is the approach of new era, in which the economic value and non-economic value of natural environment is visible, and becomes an important element of the policy, and influences on taking business decisions.

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